# Movement patterns of yellow eels (Anguilla anguilla) : a 3-year RFID study

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**Abstract**

Animal capture-recapture and individual identification within a population provide estimations about population structure and dynamics. In the case of migratory fish population monitoring, radio frequency identification methods (RFID) are used to collect information on life-history traits (growth, age of sexual maturity, reproduction, etc.) or dispersal into the river (for food research or reproduction). In this context, from 2015 to 2017, our study aims to analyse yellow eel behaviour into rivers. Identified as a Critically Endangered species on the IUCN red list, understanding eel behaviour during its freshwater phase is essential to manage their populations. Unlike conventional fishing methods, RFID studies are efficient to track eels even in water depth higher than 70 cm while these areas may represent a significant part of the stock. In Oir River, tributary of Selune River (Low-Normandy), every caught eel larger than 20 cm have been tagged with 12mm PIT-tags in low frequency (134.2 kHz), with Half-Duplex technology. On this river, a network of 9 pass-through antennas was set up along a 500 m long section to detect eels' movements. The whole site was frequently scanned with a transportable antenna (i.e. backpack-mounted) to search for less mobile individuals.Among tagged individuals, 559 eels are identified with their PIT-tag number whose 93% are detected during various monitoring occasions. The first results highlight behavioural differences between sedentary and transient yellow eels, a typical nocturnal activity, and day-to-day movements around their capture area. Additional analysis of recaptures data will estimate individual growth in this river.

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